UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
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MEMORANDUM

SUBJECT: Regional. Responses to National Remedy Review Board's Recommendations on the Second Operable Unit of the Petroleum Products Corporation National Priorities List Site

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TO: File

Purpose

The purpose of this memorandum is to document the Region's response to the National Remedy Review Board's (NRRB) recommendation on the Region's proposed remedy for the soil (Second Operable Unit) at subject site.

Background

After the NRRB reviewed the briefing package prepared by the Region, as well as information submitted on behalf of the potentially responsible parties, the board generally supported the proposed remedy (in-situ solidification/stabilization). The NRRB's support of the remedy was based on, the region's high confidence that fixation will capture 75 to 95 percent of the contaminants of concern.

In addition, the Board offered an additional alternative for consideration. The suggestion was to solidify and stabilize (s/s) the outer boundaries of the "hot spots" and to combine this with a groundwater pump and treat system to remove the oil and prevent contaminant migration beyond the boundaries of the grout curtain.

The NRRB also asked that the Region clarify whether a potential threat exists based on direct contact exposures associated with industrial land use. The Board recommended that the Region include a clear, detailed discussion of the nature of the threat posed by surface soil contamination and related risk management decisions in the final Record of Decision. The Board went on to caution the Region to consider the need for final disposition of

site soil when designing an interim remedy.

Responses to Issues Raised by the NRRB

A conservative estimate of the volume of soil that would be captures the three area shown on Figure 5 of the Region's May 1996 package, made available to the NRRB, is that approximately 75% of the soil currently estimated to be contaminated above 1,000 part per million (ppm) total petroleum hydrocarbons (TPH) and lead, will be captured. This estimate was arrived by planimetering the areas with possible contaminants of concern above the cleanup goal, and which would not be treated with the 131,200 cubic yards proposed to be treated. Those areas may be seen on the same Figure 5 as faint lines. For example, on line of section "F", a westerly protruding lobe may be seen. This lobe and three other similar areas which would not be treated, were drawn by splitting the difference between the peripheral-most boreholes with known high concentrations of contaminants and the outer-most "clean" boreholes. Assuming a 15 foot depth of contamination because the areas are peripheral, the volume contained in these four areas (which would go untreated under this remedial action because they underlie additional buildings) is estimated to be 42,700 cubic yards, or 25% of the total volume.

Regarding the potential new remediation scenario recommend by the NRRB, the EPA Office of Research and Development and the Region have the following observations that do not appear to have been considered:

- there appears to be a substantial reservoir of acidity, as evidenced by locally acid sludge and groundwater. If this acid is not overwhelmed and neutralized with enough alkaline material, then treatment of the "hot spots" by in-situ S/S will fail, possibly resulting in the acid dissolving the in-situ S/S curtain and release of lead. The proposed alternative, on the other hand, includes enough alkalinity to neutralize the acid and create a stable monolith;

- the cost associated with the installation of a slurry wall around the site is estimated to be a minimum of $ 1.5 million, not including the relocation of water, gas, sewer and other utilities along the 2,300 foot path of the wall;

- there would be no bottom containment, as the shallowest confining unit at the site is estimated to be 200 feet below ground surface; and

- enveloping the site with a slurry wall would disrupt

many more businesses, as the barrier wall would have to run along the roads, in order to avoid the partial demolition of buildings.

In response to the NRRB's requested clarification of the potential risks associated with direct contact exposure associated with the industrial land use of the site, the Region's Office of Technical Services (OTS) conducted a preliminary evaluation of direct contact exposure to the free product which sometimes breaks surface at the site. This was succeeded by the a more detailed study carried out by the Florida Department of Health and Rehabilitative Service (HRS). The October 1996 Health Consultation for the Petroleum Products Corporation Site concluded that:

- the site posed a public health hazard since people using the Pembroke Park Warehouses may have come into contact with contaminated waste oil containing concentrations of PCBs, lead, and cadmium sufficient to increase the risk of illness;

- since in December 1995 cement was poured in the area where waste oil was dissolving the asphalt and coming to the surface, there is currently little risk of adverse health effects from direct contact exposure to the waste oil in that specific area;

- there are currently waste oil seeps in the unpaved areas around the recovery wells and air stripper; and

- if waste oil seeps occur at other locations, people may again come into contact with the waste oil.

The OTS evaluation also noted that lead, as noted in the 1992 Baseline Risk Assessment (BRA), is the primary contaminant of concern. The mean lead concentration in the free product was 1,789 ppm (range 14 to 9,900 ppm) and in the surface soil the mean lead concentration was 5,000 ppm (range 178 to 22,400 ppm). These mean lead concentrations exceed the EPA screening concentration of 1,300 for industrial land use.

Finally, a sample of the sludge having a pH of 1.77 was subjected the synthetic precipitation leaching procedure (SPLP). The SPLP extract was found to leach lead at a concentration of 2,839 parts per billion (ppb). Approximately 38 ppb of this lead was found to be tetraethyl lead. The presence of tetraethyl lead was not evaluated in the 1992 BRA.